02-10-03

1624

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Kazuo NAKAMURA
Application No.	:	10/098,638
Filed on	:	03/15/2002
For	:	Micromixing method for liquefied matter containing plural types of substance
Group Art Unit	:	1624
Examiner	:	Venkataraman BALASUBRAMANIAN

Certificate of Mailing Under 37 CFR 1.8

I hereby certify that this correspondence is being deposited with the Japanese Postal Service as first class mail in an envelope addressed to ASSISTANT COMMISSIONER FOR PATENTS , WASHINGTON , DC 20231 on February 6, 2003.

Kazuo NAKAMURA (Name)

Kazuo Nakamura (Signature)

Assistant Commissioner for Patents
Washington, D.C. 20231

COMMUNICATION (S) AND AMENDMENT (CORRECTION)

Sir :

In response to the Office Action of 08/06/2002 , I have enclosed amendment as follows : Replacement of PAGE 1,6 and 7

[Application example]

The taste of alcoholic drinks did not become mellow by the permeation through sintered porous body such as sintered glass and sintered alumina.

On the other hand, the taste of alcoholic drinks became mellow by the permeation through phase separation porous glass. Especially it is remarkable that only 20% of mixed ratio of alcoholic drinks permeated through the phase separation porous glass(80% of original alcoholic drinks) achieved the same degree of mellowness with 100% of alcoholic drinks permeated through the phase separation porous glass (0% of original alcoholic drinks).

This result shows that the extremely effective micromixing between water and alcohol molecules caused the well mixed clusters of water and alcohol molecules. The well mixed clusters are known to make the taste of alcoholic drinks mellow.

The same effect of micromixing was observed in case of examples of vinegar from grain and soy sauce by the permeation through phase separation porous glass causing the change of taste toward mildness.

	Liquefied matter	Porous body	Permeation method	Mixed ratio of liquefied matter permeated through porous body	Evaluation of taste	
					Beginning	After 110 days
Comparison	Japanese "Sake" 「One Cup Ozeki」 (Alcohol 15%vol)	Not permeated (Blank)		0% (100% of the original Japanese "Sake")	X (Not mellow)	X (Not mellow)
		Sintered alumina (Pore dia. 10 μm)	B	100% (0% of the original Japanese "Sake")	X (Not mellow)	X (Not mellow)
		Sintered glass (Pore dia. 10 μm)	B	100% (0% of the original Japanese "Sake")	X (Not mellow)	X (Not mellow)
Example		Phase separation porous glass (Pore dia. 10 μm)	B	20% (80% of the original Japanese "Sake")	○ (mellow)	○ (mellow)
			B	100% (0% of the original Japanese "Sake")	○ (mellow)	○ (mellow)

	Liquefied matter	Porous body	Permeation method	Mixed ratio of liquefied matter permeated through porous body	Evaluation of taste	
					Beginning	After 110 days
Example	Italian Red Wine 「Lago Blu」 (Alcohol 11% Vol)	Not permeated (Blank)		0% (100% of the original Italian red wine)	× (Not mellow)	× (Not mellow)
		Phase separation porous glass (Pore dia. 10 μm)	B	20% (80% of the original Italian red wine)	○ (Mellow)	○ (Mellow)
			B	100% (0% of the original Italian red wine)	○ (Mellow)	○ (Mellow)
	whisky 「Black Nikka」	Not permeated (Blank)		0%	× (Not mellow)	× (Not mellow)
		Phase separation Porous glass (Pore dia. 10 μm)	B	20%	○ (Mellow)	○ (Mellow)
			B	100%	○ (Mellow)	○ (Mellow)
	Brandy 「Suntory VO」	Not Permeated (Blank)		0%	× (Not mellow)	× (Not mellow)
		Phase separation Porous glass (Pore dia. 10 μm)	B	20%	○ (Mellow)	○ (Mellow)
			B	100%	○ (Mellow)	○ (Mellow)